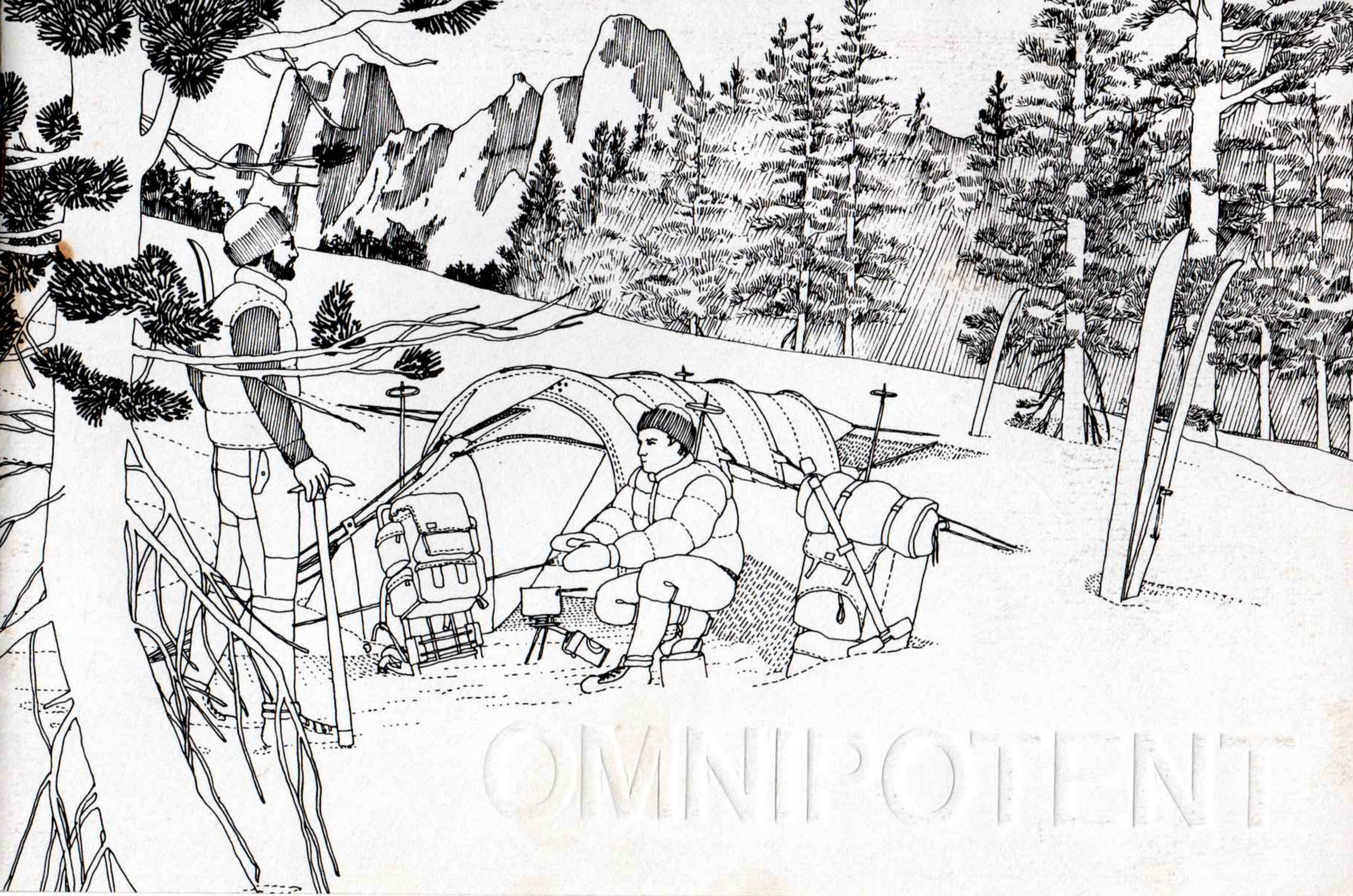
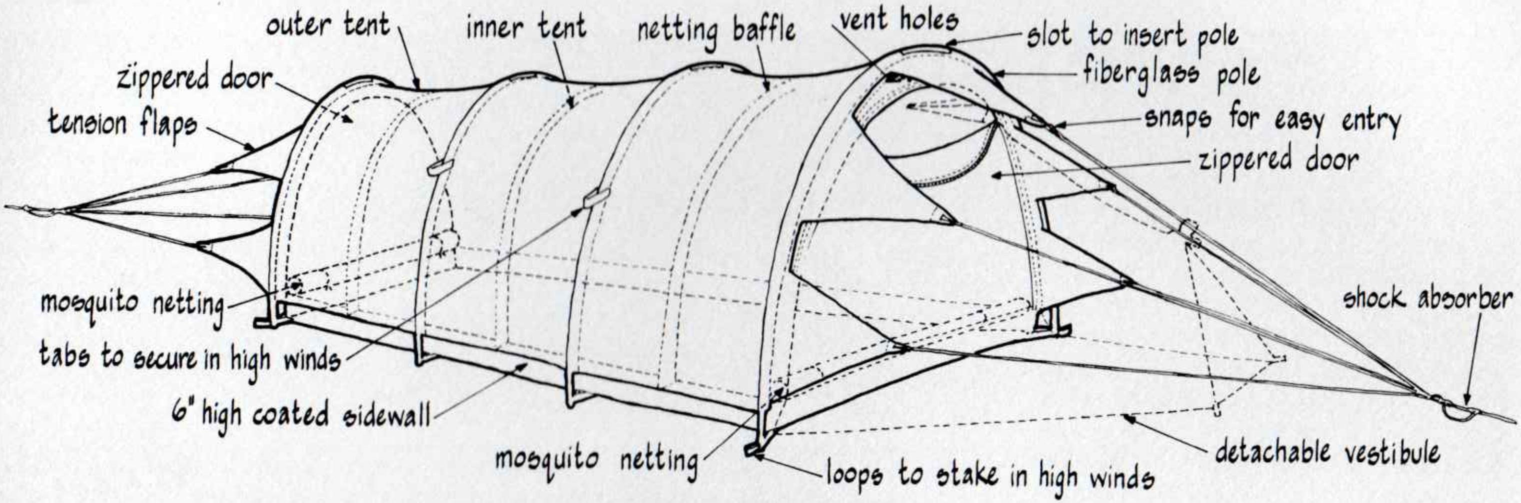


OMNIPOTENT

Copyright © 1974, Early Winters, Ltd. All rights reserved. No part of this publication may be reproduced in any form, except for limited quotations pertinent to reviews, without the written permission of Early Winters, Ltd., 300 Queen Anne Ave. N., Seattle, WA. 98109.

Drawings by Seth Seablom.

Litho in U.S.A., Pro-Litho Inc.



The OMNIPOTENT

The Omnipotent, made by Early Winters Ltd. in Seattle, is the finest mountain tent in the world today. It will retain this distinction for many years to come. In order that you may understand why this is true, we have prepared this extensive description. Because the design is novel, the construction intricate, and the price high, we feel that you are entitled to and will appreciate a thorough explanation.

RAISON D'ÊTRE

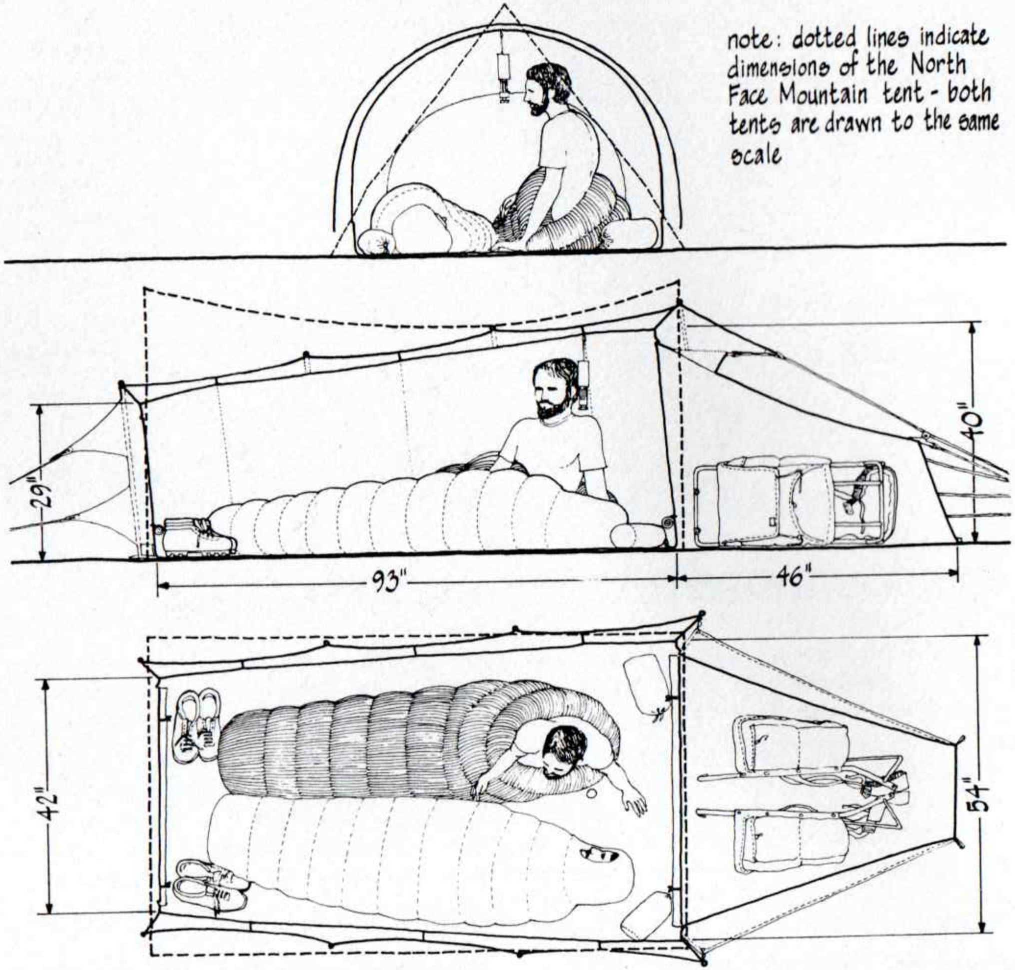
Many tents sold to hikers and climbers, while adequate in mild weather, tend to fail when the weather turns truly serious. To the casual hiker, camped near a trail in the summer, this usually means only a miserable day or two hiking out. To the wilderness traveler, who may be many days from a roadhead and forced to wait out storms and avalanche hazards, absolutely secure shelter can be the difference between life and death.

IDEAL SHAPE

There is one optimal shape for a two person tent. It is high enough for two persons to sit up side by side, wide enough to provide comfortable sleeping room, and long enough to accomodate tall persons plus a certain amount of gear. Since the space in the rear of the tent does not have to satisfy the height and width requirements of the front, the ideal tent tapers toward the rear—thus saving weight by using less material.

The walls are vertical near the floor and the rear end is large enough to allow a second door. The Omnipotent exactly encloses the ideal shape.

Until recently a triangular prism was thought to be the best configuration for for a mountain tent. This shape has many deficiencies. The typical triangular tent has severely sloping sides and excessive height. The Sierra Designs Glacier tent and the North Face Mountain tent are good examples of triangular tent design. These designs incorporate two basic modifications of the simple triangular shape. A catenary cut helps tighten the large unsupported side panels. Side pullouts cause the walls to be more vertical near the floor. Despite these improvements, the basic deficiencies of the triangular design remain. The commonly used straight aluminum tent poles dictate the basic shape of this type of tent. Please note that of all geometrical shapes, the circle encloses the largest area with a given length line. Note also that the triangle is the least efficient of all regular polygons in enclosing area. Our development of flexible, lightweight tubular fiberglass poles allows the Omnipotent to assume its superior shape. These drawings illustrate the efficient utilization of space.



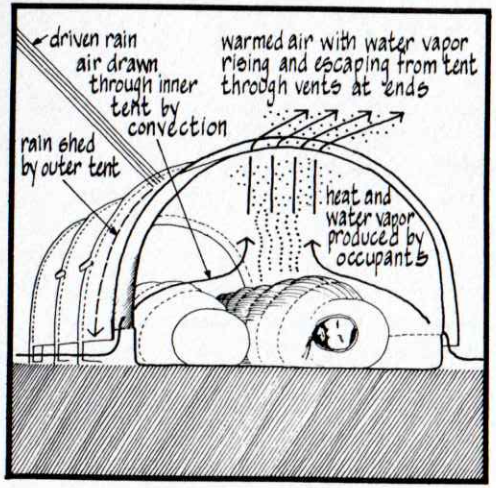
note: dotted lines indicate dimensions of the North Face Mountain tent - both tents are drawn to the same scale

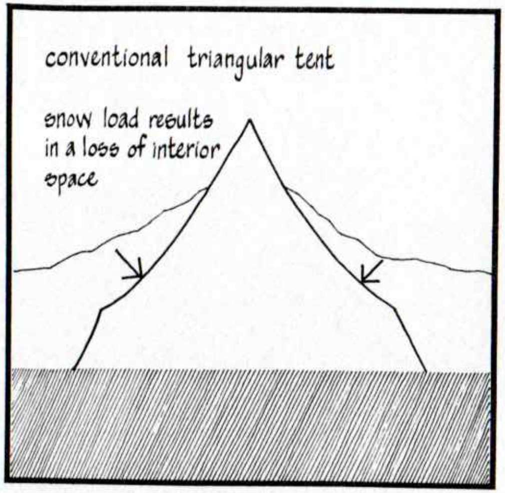
AN INTEGRATED TENT

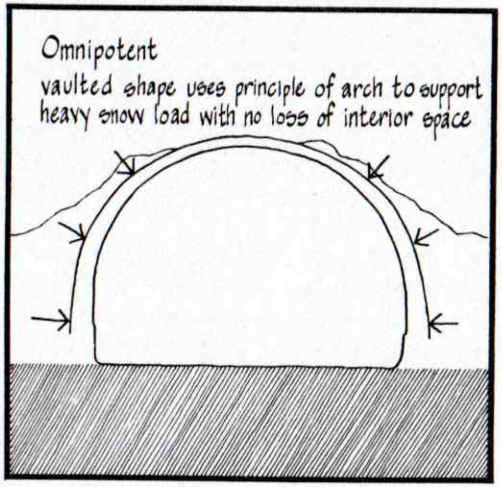
How many climbers and hikers caught in a sudden rainstorm have cursed the clumsy rainfly required by most tents? The Omnipotent is a completely integrated double-wall design that eliminates the rainfly and the attendant hassles of pitching it. Our design allows lighter fabric to be used for the inner tent because stress is shared by the two layers of fabric. These two layers form an enclosed air space 1½ to 4 inches thick. This space is very important to the functioning of the tent. Warm, moisture-laden air rises from the top of the protected inner tent by convection and escapes from vents at the front and rear of the enclosed air space. This displaced air slowly draws fresh air from ground level under the open space between the tent walls and through the porous inner tent wall. The air is then heated by the warmth of the occupants and rises and escapes. Essentially this design functions like the chimney of a lamp in promoting the efficient flow of air through the tent. Thus the humidity level inside the tent is kept low.

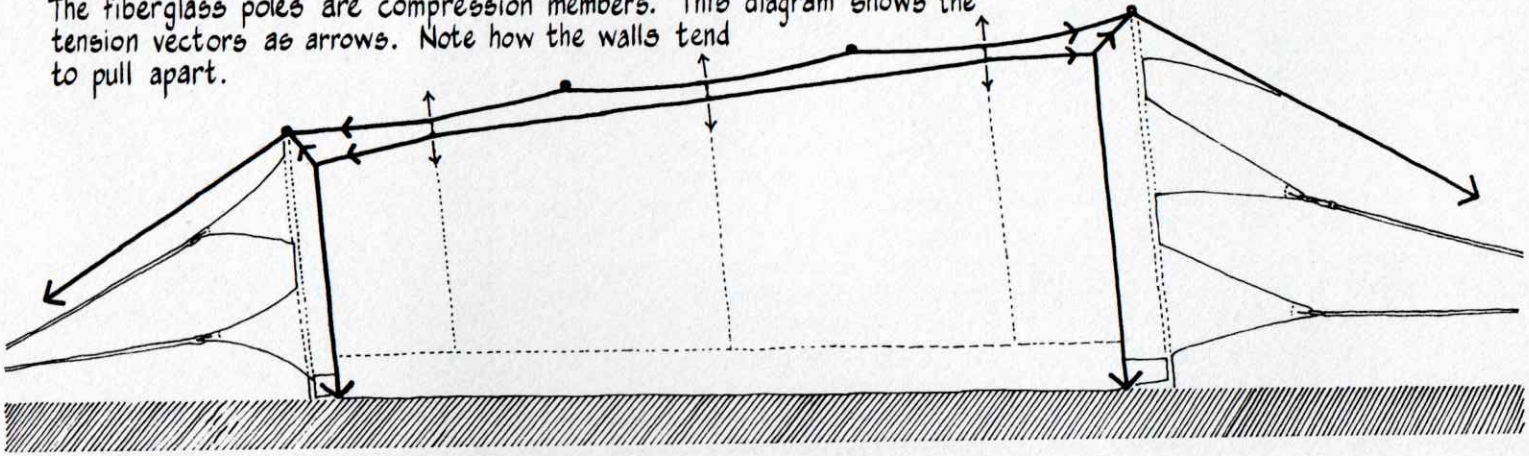
The only place where condensation can form inside the tent is on the coated fabric of the doors and the 6 inch high coated portions of the sidewall. Condensation there is limited due to the large air-permeable inner tent and the excellent ventilation. The only other integrated double-wall tents of which we are aware—the Stephenson and the MSR—make no such provisions for ventilation between the tent walls.

The insulating effect of the enclosed air space is significant. The Omnipotent is so constructed that rain and wet snow cannot reach the permeable part of the tent, even when driven horizontally by high winds. Flaps cover the zippers and the 6 inch high coated portion of the side wall protects against ground water.


driven rain
air drawn through inner tent by convection
warmed air with water vapor rising and escaping from tent through vents at ends
rain shed by outer tent
heat and water vapor produced by occupants


conventional triangular tent
snow load results in a loss of interior space


Omnipotent
vaulted shape uses principle of arch to support heavy snow load with no loss of interior space



The Omnipotent is a unified structure with the fabric everywhere under tension. The fiberglass poles are compression members. This diagram shows the tension vectors as arrows. Note how the walls tend to pull apart.

MULTI-DIRECTIONAL TENSION

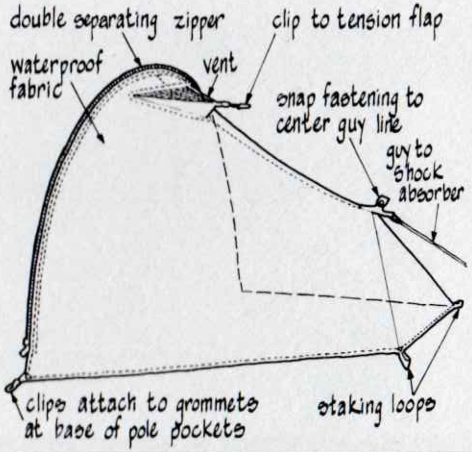
Setting up an Omnipotent requires only two main anchors. These two anchors alone are sufficient in winds up to 25 MPH. In higher winds the four corners are staked, and tethers are attached to the side tabs on the center poles for additional stability against side winds. Pitched in this manner the Omnipotent is extremely stable in the worst blizzards and will support heavy snow loads with no loss of interior space. The snow load is distributed evenly by grasping the baffle inside the tent & gently shaking. See drawing on previous page.

Our design is cut to form an elegant saddle shape between the poles. Tension from the ends always tends to pull the walls apart and preserve the space between the tent walls. Please contrast this with the Stephenson tent where the walls are barely separated and easily touch, and the MSR which uses the questionable expediency of stapling small pieces of foam to the inner wall to prevent its contacting the outer wall.

The Omnipotent is a dynamic structure. Its flexible nature absorbs sudden wind loads by progressively resisting them. Its strong tendency to keep its design shape also helps conserve heat by preventing undue agitation of the inside air space in high winds. Unlike tents of conventional design, there is a total absence of flapping which is not only extremely annoying, but contributes greatly to fabric fatigue. Instead of flapping in high winds, the Omnipotent shudders quietly as the structure—all under multi-directional tension—distributes uneven wind forces.

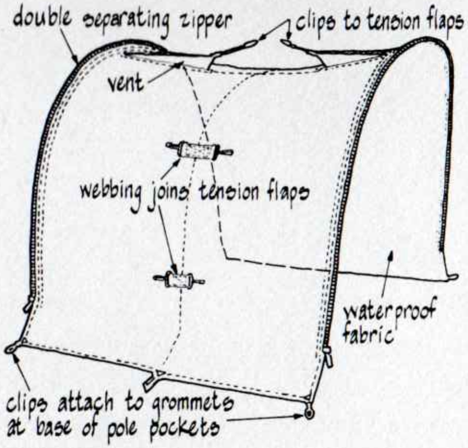
OPTIONAL VESTIBULE

The vestibule zips on to an accessory zipper sewn into the front of all new Omnipotents. It provides additional cover for gear, a vented space for cooking and, by its tapered shape, improves wind penetration. It is useful on trips when much rain is anticipated and for high altitude or expeditionary use where the additional room is required for storage and cooking. It is by no means essential to the structural integrity of the tent.



OPTIONAL JOINER

The joiner uses the same accessory zipper provided on all new Omnipotents. It is useful to larger parties as it joins two tents into a single long structure ample for a party of four, with a large vented space between for cooking and gear storage. Entry to tents so joined is through the rear doors of each tent.


double separating zipper
clips to tension flaps
vent
webbing joins tension flaps
waterproof fabric
clips attach to grommets at base of pole pockets

EASE OF USE

The current record for setting up an Omnipotent from tent-in-sack to contestant inside tent is one minute and forty seconds. Normal unhurried pitching time is less than five minutes.

Easy movement through the guy lines is assured by convenient snaps on two of the lines in front and one at the rear. The large doors at both ends allow the tent to be completely opened on hot days. These doors are backed by fine meshed no-see-um proof netting. The doors are vertical and protected by an overhanging eve on the outer tent, so that on calm, rainy days the doors may be left open and the view and fresh air may be enjoyed. These features make the Omnipotent suitable for all mountain weather. Because the tent is under tension from two main points and·forces are equally distributed to the tent fabric, no time need be spent outside adjusting and tuning the tent.

At 5 lbs. 4 oz. the Omnipotent is lighter than almost all other mountain tents. Yet, in usable room, strength and convenience it is superior to every other two-person tent, regardless of weight.

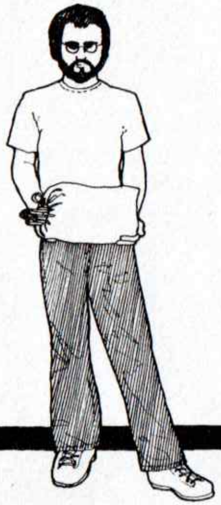


fig. 1

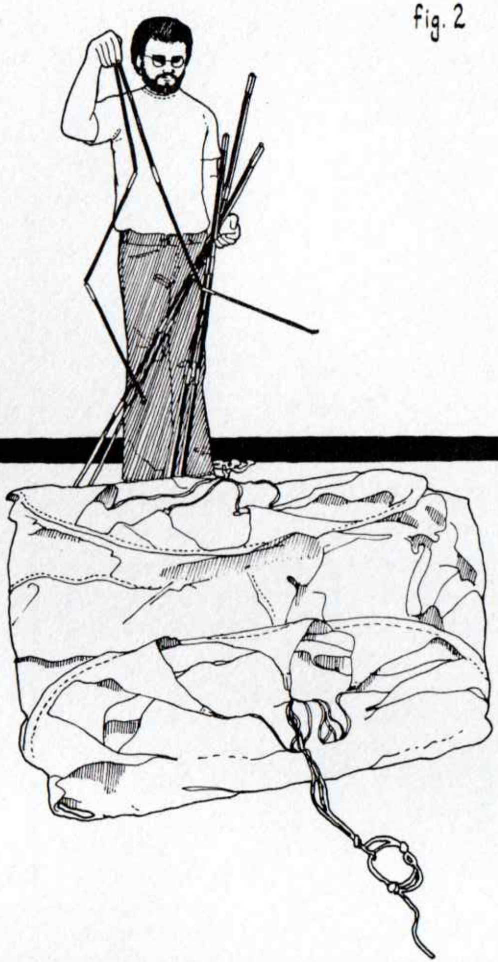


fig. 2

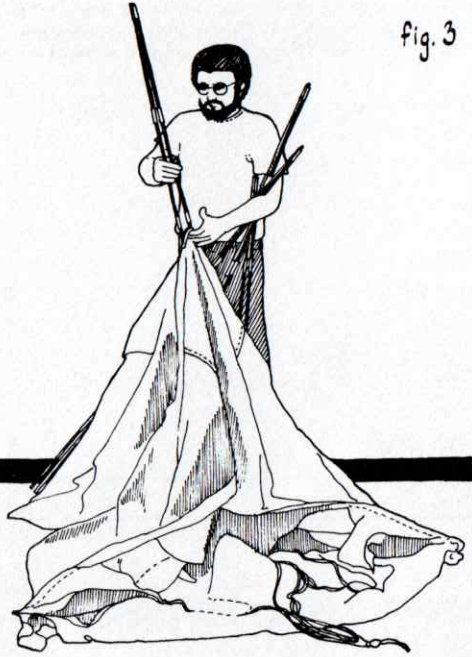


fig. 3

SETTING UP

The Omnipotent is simple and quick to set up. Tent and poles are packed in a small stuff sack (fig. 1). The tent is unrolled and unfolded. Each shock-corded pole is quickly assembled by holding the apex of the pole at the slide coupling and shaking (fig. 2). The four poles are of different lengths because of the taper of the tent (fig. 3). Starting from the small end, each pole is inserted into its appropriate pole pocket (fig. 4). When the pole has reached the bottom of the pole pocket on both sides, the apex of the pole at the coupling is

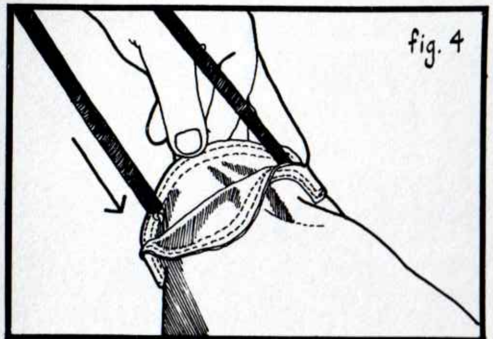


fig. 4

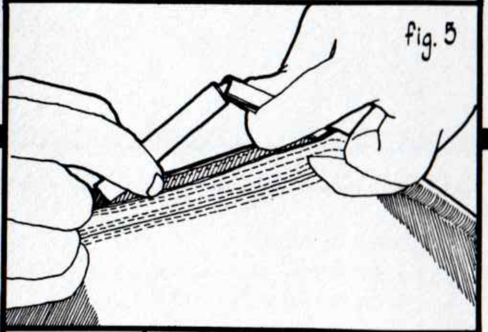


fig. 5

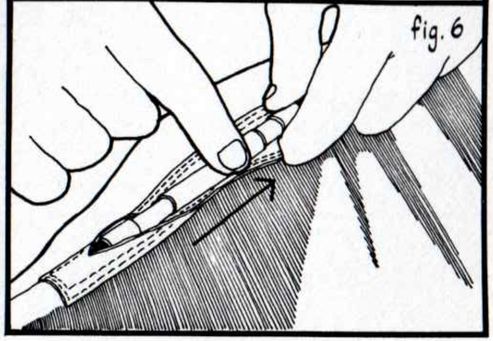


fig. 6

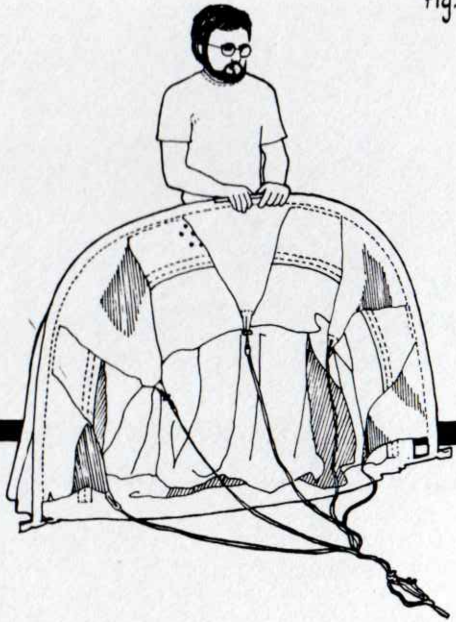


fig. 7

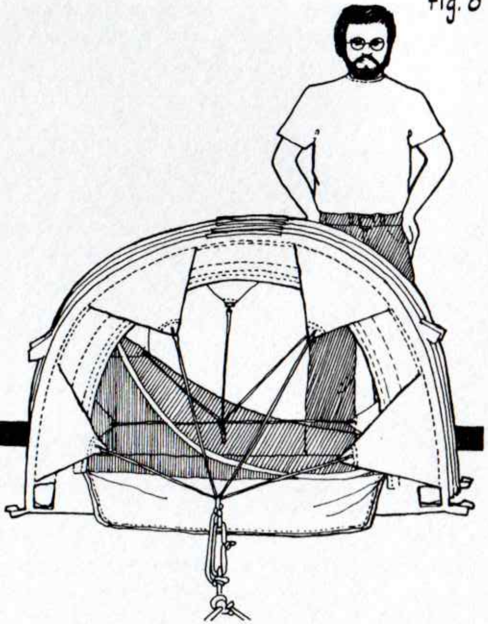
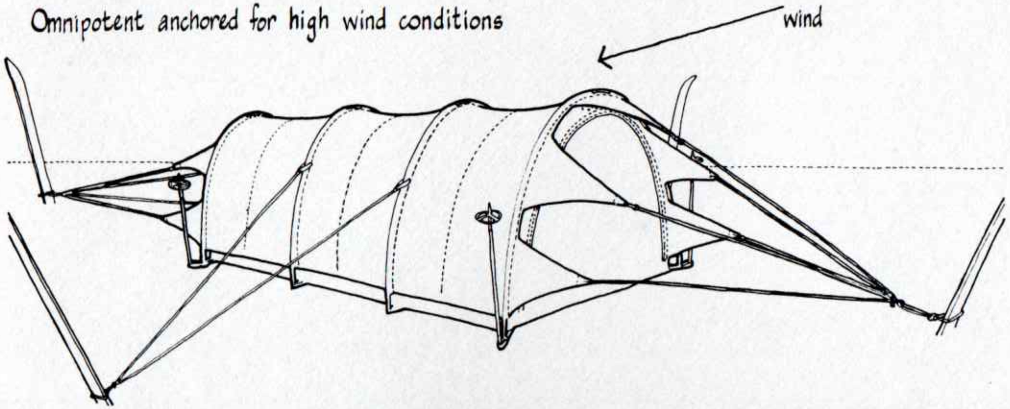


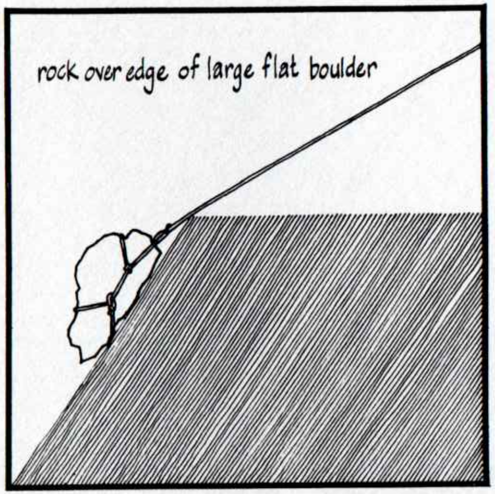
fig. 8

pushed down until the two adjacent ends are horizontal and the slide coupling is locked (figs. 5&6). This process is repeated until all poles have been locked into their appropriate pole pockets (fig. 7). The tent is then tensioned and anchored at each end. Properly pitched, the shock absorber is fully extended (fig. 8). We do not include stakes because varied terrain dictates different anchoring methods. The end anchors must be very strong in high wind conditions. On the next page are a few methods of anchoring that we have found useful. The resourceful wilderness traveler will discover many more.

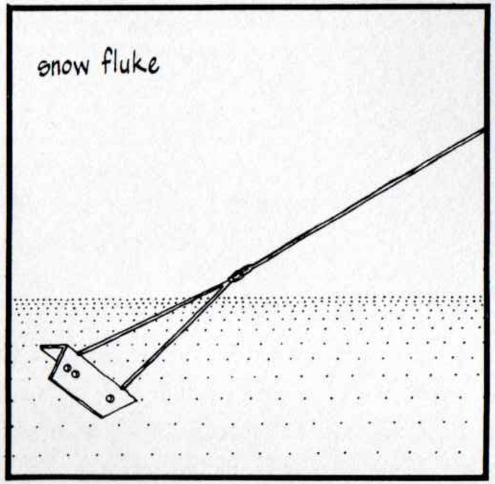
Omnipotent anchored for high wind conditions



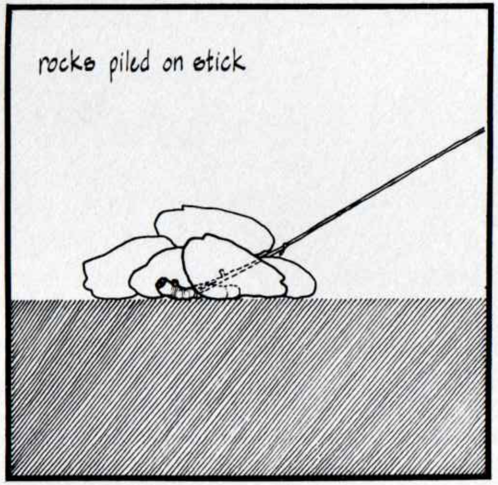
rock over edge of large flat boulder



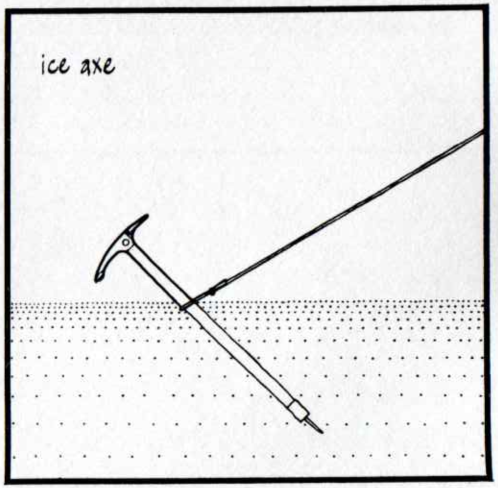
snow fluke



rocks piled on stick



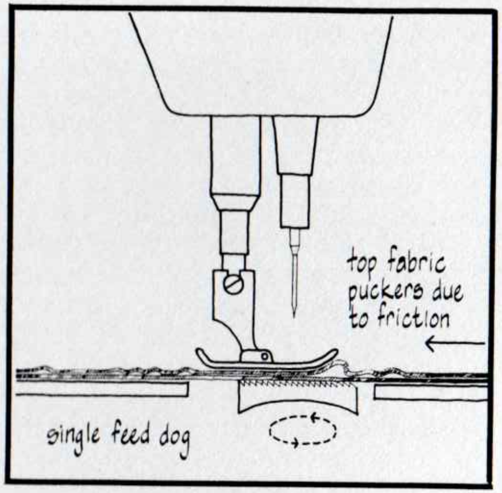
ice axe

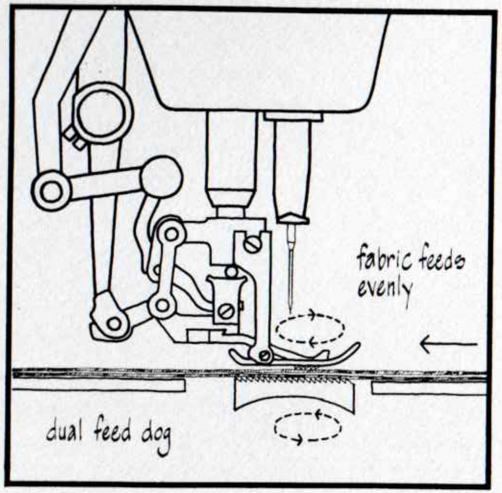


METHODS & MATERIALS

No design, however well conceived, is worthwhile unless it is properly executed. We would like to describe the extraordinary pains we have taken to make the construction of the Omnipotent worthy of its design.

Sewing Machines: We have experimented with many different machines that are available and used for this type of sewing work. The central problem encountered is the difficulty of sewing the heavy thread which is necessary for strength and durability on the lightweight grades of nylon that are optimal for tent construction. The customary practice is to use either lighter thread or heavier nylon. Neither of these compromises were acceptable to us. The only way out of this dilemma was to build a sewing machine that would do the job. Fortunately we encountered in Seattle a man who is a sewing machine genius. He assembled the machines which we now possess. These machines are presently the only ones in existence. Conventional machines feed only the bottom layer of fabric and use friction to feed the top. When sewing on nylon, which is very slick fabric, this results in a loss of accuracy. Our machines have separate feeds for each layer of cloth which ensures absolutely even feed.





The main problem in complex sewing is controlling the piece which is being sewn. Conventional machines have a clutch and belt connecting the motor to the head. Our machines have a recently developed integrated drive unit which uses transistorized circuitry to electronically control a motor which is directly coupled to the sewing head. This means that the sewing machine operator can concentrate completely on the details of sewing. This results in better and more accurate seams.

We found that we could purchase similar sewing heads from Juki, a Japanese firm. Since Japan consistently and needlessly pollutes the oceans with industrial wastes and ignores well-established principles of fisheries conservation, we will not buy Japanese machines to make our tents. The German Pfaff heads we use are twice as expensive, but we will not support economically any nation which destroys the natural environment which we feel is sacred.

Inspection of Materials: We inspect every yard of all fabric we use. All yardage containing defects which would affect the structural integrity of our tents is discarded. All zippers, cordage and fiberglass parts are also inspected.

Cloth Cutting: We use dimensionally stable mylar patterns and cut our nylon in small lays to insure perfect fabric parts. The inner tent fabric which, being uncoated, is subject to fraying, is hot cut—as are the pole pocket tabs and webbing parts. Fabric is cut in the largest possible pieces to avoid unnecessary seams.

Pole Manufacture: All couplings are carefully beveled to prevent them from snagging fabric. Each set of poles is used to set up its matching tent for final inspection. This insures perfect fit.

Quality Control: It takes thirty separate sewing operations to make an Omnipotent. Every sewn part is inspected before it is passed to the next step. Each part must meet very rigid tolerances. These tolerances have been established to cover sewing accuracy, seam quality and lack of puckering. If they are not met the part is simply discarded and will never be used in a tent. Our sewing machine operators are so skilled, and our machines so good, that few parts are rejected despite our very rigid standards. When the tent is completed, it is set up and receives a scrupulous inspection before it is given its serial number. All of the Omnipotent seams are backstichted and the baffle seams of the outer tent are sealed to prevent any possible leaks in heavy rain.

Materials: We are now able to purchase dye-lot quantities of fabric. This means that we get exactly the fabric we want, finished to our specifications.

Inner Tent: This is a 1.6 oz. porous ripstop with a low thread count. Having thicker yarns and fewer per inch vastly increases the tear strength of this fabric.

Outer Tent: The same 1.6 oz. base fabric is given a very light .4 oz/yd. polymer coat. This coating is impenetrable to water without adding extra weight. Many manufacturers indiscriminately use the same fabric for the fly as the floor—a 1.9 oz. ripstop with a heavy coating. This means you carry five ounces of unnecessary weight.

Floor & Doors: This is a densely woven 1.7 oz. taffeta base fabric with a heavy .9 oz. coating. The heavier fabric used for these parts, which are subject to abrasion, insures a long floor life and no leaks from ground water. (The Omnipotent is not provided with a zippered cook hole because such an opening destroys the watertight integrity of the floor.) Many manufacturers saddled with a clumsy tent design compensate by using a lighter fabric on the floor to reduce weight.

Tension Tabs: Here we use a heavy 2.2 oz. ripstop sailcloth. This fabric must be extremely strong, as it receives tension from the tether cords and distributes it to the lighter outer tent fabric. Examine the drawing of the Omnipotent and imagine lines of force originating at the end anchors and gradually spreading to the entire surface. Use of special fabrics allows this stress distribution to proceed perfectly. Look at a conventional triangular tent. Can you see how all the stress is concentrated at the apex of the triangle? These tents have to be made of heavier fabric to withstand high point stresses.

Webbing: The ¾ inch webbing used on the corner tabs and as protection on the pole pocket slot is a stiff, hard-finished webbing, hot cut to eliminate fraying. The 1 3/8 inch webbing used on the tension tabs and for the side tabs is extra wide to distribute force better.

Thread: We use No. 30 polyester core thread with cotton wrap for many seams. The cotton wrap cushions the thread against the nylon and prevents the cutting action that can take place when two synthetic yarns meet. Floor and door seams are sewn with No. 24 polyester core thread. We possess the only sewing machines we have ever seen capable of smoothly sewing this thread on lightweight nylon. No. 24 thread such as we use is commonly employed in pack construction. The cotton wrap swells on contact with water and plugs the needle holes in the coated fabric. We use the narrowest profile needles possible to minimize the size of the puncture.

Seams: All possible seams are double sewn to provide a back up if a thread should fail. The only single seams are those which are inside the outer tent and thus protected from abrasion and those which attach the baffles to the inner and outer tent.

Netting: We use a very fine mesh knitted polyester mosquito netting which is impervious to no-see-ums. This same netting is ideal for the baffles as its slight stretch distributes local stresses.

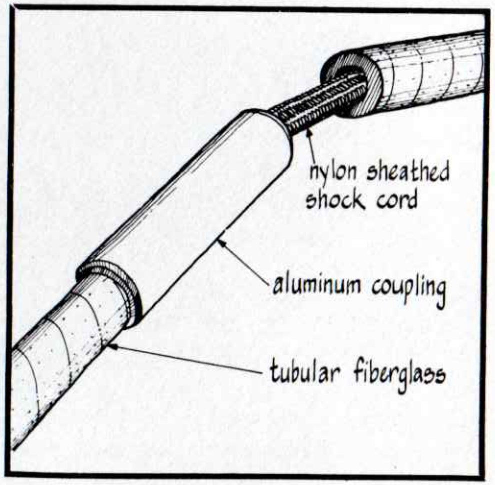
Zippers: We use the Talon ladder coil zipper which combines the ice shedding characteristics of a toothed zipper with the extreme smoothness, strength and self-repairing qualities of a coil zipper. The extra long toggles on both sides of the sliders are a great aid when your fingers are numbed by the cold. A superlight ladder coil completely closes the mosquito netting.

Hollow Fiberglass Pole Sections: These were the biggest headache to engineer and get produced. Fiberglass has twice the strength to weight ratio of aluminum. Use of this very expensive material allows us to have 4 pole sets with a total weight of 1 pound. Compare this with 1½ pounds for 2 aluminum pole sets. Without going into the technical engineering aspects of these figerglass poles, suffice it to say that none has yet broken in 80 original tents tested rigorously throughout the world. One tent pitched on a porch in Alaska had a 4X8′ sheet of ¾″ plywood fall on it. The tent was smashed practically flat, yet it and its surprised occupant sustained no damage.

The materials used to make these fiberglass poles costs four times more than the material used for aluminum poles. Add the expense of manufacturing two to three times as many couplings and shock-cording the pole sets to facilitate quick assembly, and you can begin to see why the Omnipotent costs what it does.

Shock Cord: The nylon sheathed shock cord resists wear much better than the cotton sheathed product often used.

Cordage: The bridle assembly of the Omnipotent has a test strength of 800 pounds. This extra strength allows for a potential 50% loss due to abrasion and ultraviolet degradation. The shock absorber at each end assists in keeping the tent tight when the synthetic materials expand and contract due to changes in temperature and humidity.



THE FACTS

Weight: 5 lbs. 4 oz. including: tent, poles, cordage & stuff sack.
Optional vestibule & stuff sack—12 oz.
Optional joiner & stuff sack—12 oz.

Interior Size: Length: 93"
Width: 54" front, 42" rear
Height: 40" front, 29" rear

Materials: Inner tent: 1.6 oz. ripstop, light yellow.
Outer tent: 2.0 oz. polymer coated ripstop, periwinkle blue.
Doors & floor: 2.6 oz. polymer coated taffeta, light grey.
Tension flaps: 2.2 oz. ripstop, bright yellow.
Pole shafts: Hollow fiberglass.
Couplings: Aluminum.
Pole shock cord: 1/8" nylon sheath, rubber core.
Shock absorber: 5/16" nylon sheath, rubber core.
Zippers: Doors: Talon ladder coil.
Mosquito netting: Talon ladder coil.

Warrantee: 1 year against defects in materials and workmanship.

ORDERING INFORMATON

Price: Omnipotent: $~~225.00~~ 250—
Optional Vestibule: [redacted] $30.00
Optional Joiner: [redacted] $30.00
(Washington residents add state sales tax.)

Payment: Certified check or money order preferred. Personal checks will cause a 2 week delay in shipment due to bank processing time.

Shipment: All Omnipotents will be shipped insured and post paid within the continental United States via surface parcel post. Foreign, Alaska and airmail orders: please specify preferred shipping method and include payment for a six pound parcel for the tent and a one pound parcel for the optional vestibule or joiner.

Address: Early Winters, Ltd.
Shipping Dept.
300 Queen Anne Ave. N.
Seattle, WA. 98109
U.S.A.

"Omnipotent" is a Trade Mark of Early Winters, Ltd., Seattle, Washington 98109. Patent Pending.

EARLY WINTERS, LTD.

at the Alpine Guild
300 Queen Anne Ave. N.
Seattle, WA. 98109
(206) 283-6030

Granite Stairway Mountaineering, Inc.
3040 STATE STREET
SANTA BARBARA, CALIF. 93105
TELEPHONE (805) 682-1083